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(71)Applicant : ASAHI DENKA KOGYO KK

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(72)Inventor : YAJIMA AKIMASA  
IKEDA KIMIHIKO  
KABEYA RYOJI  
ISHIZUKA YOSHITSUGU  
KOMURA KAZUTADA

## (54) MICROETCHING AGENT

## (57)Abstract:

PROBLEM TO BE SOLVED: To provide a microetching agent usable for approximately all etching tanks including stainless tanks and also capable of executing good microetching without generating unevenness in etching even in the case microstains such as oily components are present on the surface of copper.

SOLUTION: This microetching agent for copper and/or copper alloys is composed of an aqueous solution containing (a) ferric sulfate (III), (b) sulfuric acid and (c) a nonionic surfactant, the concentration of (a) is 1 to 40 wt.%, the ratio of (b) to 100 pts.wt. of (a) is 5 to 50 pts.wt., the concentration of (c) is 0.01 to 10 wt.%, the content of halogen is <0.01 wt.%, and, suitably, (d) phosphoric acid of 0.01 to 30 wt.%, or carboxylic acid of 0.01 to 30 wt.%, or phosphoric acid of 0.01 to 15 wt.% and carboxylic acid of 0.01 to 15 wt.% are contained.

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**IKEDA KIMIHIKO;**  
**KABEYA RYOJI;**  
**ISHIZUKA YOSHITSUGU;**  
**KOMURA KAZUTADA;**Assignee: **ASAHI DENKA KOGYO KK**  
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